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(19)

(54) CLIP WITH FASTENING MEANS

(71) We, A. RAYMOND, of 7850 Lorrach/B Postfach 42, Federal Republic of Germany, a Kommanditgesellschaft organised under the laws of the Federal Republic of Germany, do hereby declare the invention for which we pray that a patent may be granted to us, and the method by which it is to be performed, to be particularly described in and by the following statement:—

The present invention relates to cable clips of plastics material joined to form a chain.

In accordance with the invention, there is provided a chain of two or more cable clips made of a plastics material, each clip having two claw halves to grip a cable therebetween and having a spigot or socket mating with and releasably connected with a complementary socket or spigot of an adjoining clip, or distance piece between clips, in the chain, the spigots and sockets being mutually rotatable to enable the clips in the chain to be independently rotated about a common axis.

In its shortest form the chain of clips consists of two clips only. However, within the scope of the invention, further clips can be linked together to provide any required length of chain of such elements.

Such an interconnection of a plurality of clips enables cables and other elongate members to be kept rigid when they are being laid and fitted in enclosed spaces as under the bonnets and in the boots of cars.

The spigot and the complementary socket can be arranged in any required manner on the clips, so that clips are provided which carry only the spigot part or which have a spigot part on one side and a socket on the other. It is also possible to provide only the socket part on the clip. In cases where an identical part, i.e. a spigot or a socket is provided on each of two sides of two clips, a distance piece is used to connect the clips together.

Furthermore, an additional spigot or socket can be provided on such a clip, which part acts as an element for anchoring the clip to a carrier.

Some embodiments of the invention are illustrated by way of example in the accompanying drawings, in which:

Figure 1 shows a clip for holding cables and incorporating a spigot;

Figure 2 shows a clip for holding cables and incorporating a socket for receiving the spigot;

Figure 3 illustrates an arrangement constituting the shortest chain of clips for holding cables, i.e. two such clips;

Figure 4 illustrates a clip for holding cables and incorporating a spigot provided on each of two lateral faces of the clip;

Figure 5 illustrates a clip for holding cables and incorporating a socket provided on each of two lateral faces of the clip;

Figure 6 illustrates a clip for holding cables and incorporating a spigot and a socket, one of these being disposed on one lateral face of the cable clip and the other on the opposite lateral face thereof;

Figure 7 shows a plurality of interconnected clips for holding cables of the kind shown in Fig. 6, each having a spigot on one of its lateral faces and a socket on its other lateral face;

Figure 8 illustrates a special arrangement in which, for example, three spigots are provided on one clip; and

Figure 9 illustrates a distance piece for connecting two clips.

Figure 1 shows a cable clip 1 made of plastics material. The clip consists of two co-operating claw halves 2 and 3 forming an opening between them, the ends of the claws being bent outwardly so that a clamping mouth 4 is formed. An elongated member, for example a cable, not illustrated, can be pushed through the clamping mouth 4

into a position in which it is embraced by the claw halves 2 and 3 and thus securely clamped. To enable each clip to act as a link in a chain of several such clips for the purpose of forming a single unit which cannot be readily mislaid, this clip 1 has a spigot 6 on its claw half 2. Said spigot is one of two components connecting the clips shown in Figs. 1 and 2 at 5 (fig. 3). The other component is a complementary part in the form of an elongated socket 7 (see Fig. 2). By inserting the part 6 into the part 7 clips can be interconnected. The parts 6 and 7 therefore form complementary snap-action elements 8*a*, 8*b*. The snap-action elements are so shaped that the connection can be opened and closed at any time, circumferential spaced ridges on part 6 engaging within corresponding grooves in the socket wall of part 7.

Therefore, as shown in Figures 1 and 2, the clips have complementarily shaped spigot 6 and socket 7. Referring to Figure 2, the clip 1a to be coupled consists of two co-operating claw halves 2a and 3a, similar to these previously described, but the elongated socket 7, complementary to the spigot 6 of Figure 1, is provided on the claw half 3a. This socket 7 comprises snap-action elements 6a in which the spigot 6 can engage at 5 (fig. 3).

Figure 3 shows a short form of a chain of clips. The chain is made up by coupling clip 1 to clip 1a.

Figures 4 to 6 illustrate different forms of clip. Clip 1b of Figure 4 has a spigot 6 on the lateral face of each claw half 2b and 3b, whereas clip 1c of Figure 5 has an elongated socket 7 on the lateral face of each of the claw halves 2c and 3c. In the clip 1d shown in Figure 6, the claw half 2d has a spigot 6, and the claw half 3d an elongated socket 7.

Figure 7 shows a chain 12 of clips of the kind drawn in Figure 6. In this chain, connections 5 interconnect the clips 1d rigidly in the plane of the drawing ie. along the common axis of the connections 5 but in such a way that each clip in the chain can be deflected to any angular position about the fastener axis in order to receive and connect elongated bodies which extend towards the chain from various directions.

A further possible arrangement for interconnecting clips is illustrated in Figure 9. In this arrangement a plurality of clips 1b can be connected together to form a chain by fitting between each two clips a distance piece in the form of an intermediate double-ended socket 10 to receive spigots 6. It is likewise also possible for the clips 1c which each have a socket 7 on one of their claw halves, to be connected in spaced relationship by means of a distance piece in the form of a double spigot 11.

It is furthermore possible, if required, to anchor a chain of clips on a carrier 13 in the manner shown in Figure 8. In this example one clip 1e of a chain has an additional part for effecting a connection with the carrier 13. The additional part may be a spigot bit 6 or an elongated socket. The carrier 13 is provided with a complementary part, i.e. the socket 7 as shown or a spigot.

WHAT WE CLAIM IS:—

1. A chain of two or more cable clips made of a plastics material, each clip having two claw halves to grip a cable therebetween and having a spigot or socket mating with and releasably connected with a complementary socket or spigot of an adjoining clip, or distance piece between clips, in the chain, the spigots and sockets being mutually rotatable to enable the clips in the chain to be independently rotated about a common axis.

2. A chain of clips according to Claim 1, wherein the or each distance piece, if present, is in the form of a socket to receive two clip spigots, or a double ended spigot to enter two clip sockets.

3. A chain of two or more cable clips, the clips being constructed and arranged substantially as hereinbefore described and shown in Figure 1, or 2, or 5, or 6, or 8, or 9 of the accompanying drawings.

4. A chain of clips constructed and arranged substantially as hereinbefore described and shown in Figure 3, or 7, or 9 of the accompanying drawings.

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1480915 COMPLETE SPECIFICATION
2 SHEETS *This drawing is a reproduction of the Original on a reduced scale*
Sheet 1

FIG.2.

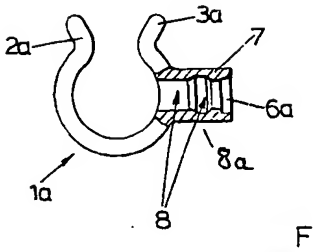

FIG.1.

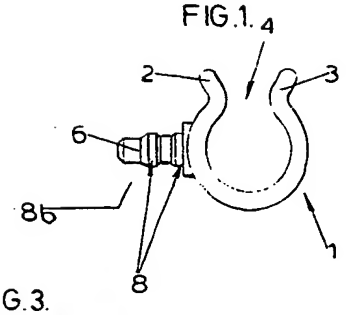

FIG.3.

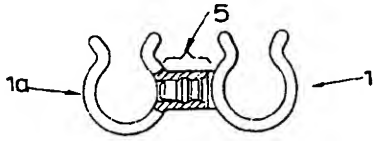

FIG.5.

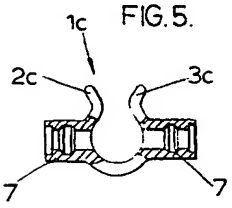

FIG.4.

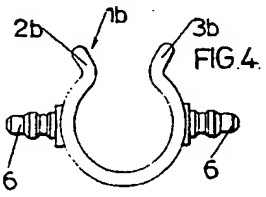

FIG.6.

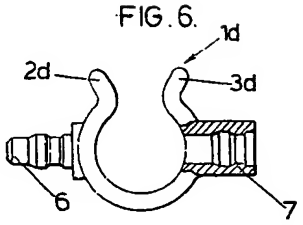

FIG. 7.

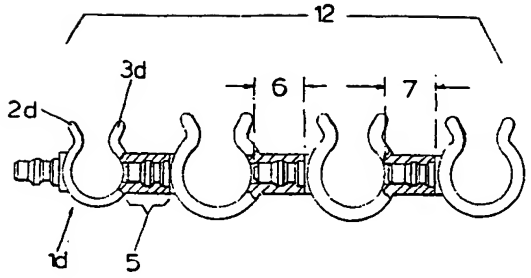

FIG 8.

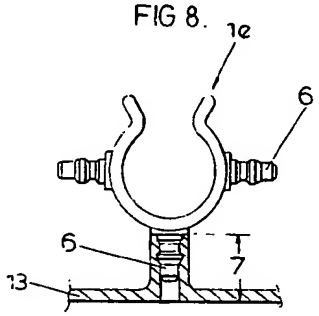

FIG. 9.